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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/797,231

03/10/2004

Richard Hammond

ASC-057C1

2980

51414

7590

11/20/2006

GOODWIN PROCTER LLP
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EXAMINER

GHYKA, ALEXANDER G

ART UNIT

PAPER NUMBER

2812

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/797,231

Applicant(s)

HAMMOND ET AL.

Examiner

Alexander G. Ghyska

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

ALEXANDER GHYKA
PRIMARY EXAMINER

AV 2812
Alex Ghyska

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicants' response of 8/18/2006 has been considered and entered in the record. The obviousness double patenting rejections of the previous Office actions are withdrawn in view of the terminal disclaimers which were submitted. The following new rejection is made in view of IDS submitted by Applicants. Claims 28-55 are now under consideration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 28-35 and 40-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Ismail (Si/SiGe High Speed Field Effect Transistors, IEEE 1995) "Ismail".

The present Claims generally require providing a strained semiconductor layer; providing a SiGe layer over said strained semiconductor layer; and selectively removing said SiGe layer to expose said strained semiconductor layer.

Ismail et al shows a FET formed providing a strained semiconductor layer; providing a SiGe layer over the strained semiconductor layer and selective removal of SiGe in one region to expose the strained semiconductor layer. See Figure 7, pg 20.01.03. The strained semiconductor layer comprises Si as required by present Claim

29 and 49. A relaxed semiconductor layer comprising Si and Ge is provided beneath the strained layer as required by present Claims 31-33 and 49-52. See Figure 7, page 20.1.3. With respect to Claims 34-35 and 53-55, Ismail discloses an insulator layer and exemplifies silicon dioxide. See last paragraph of column 1, page 20.1.3. With respect to Claims 40-44, Ismail discloses MOSFETs. See Figure 9, page 20.1.3. With respect to Claims 45 and 46, Ismail et al discloses a buried channel and gate as required by the afore mentioned Claims. See Figures 7 and 9, column 20.1.3. With respect to Claims 47-48, Ismail disclose source and drain regions which are doped as required by the present Claims. See Figures 7 and 9, column 20.1.3. Therefore, the afore mentioned Claims are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ismail (Si/SiGe High Speed Field Effect Transistors, IEEE 1995) "Ismail", as applied to claims 28-35 and 40-55 above, and further in view of Chang et al (Selective Etching of SiGe on SiGe/Si Heterostructures, J. Electrochem, Soc. Vol 138, No. 1, 1991 "Chang et al").

Ismail is relied upon as discussed above. As discussed above, Ismail discloses selectively removing SiGe in one region where the N-MODFET is formed, but not in another region.

However, Ismail does not disclose the oxidation and etch technique as required by the afore mentioned Claims.

Chang et al disclose a method for selectively removing SiGe disposed over Si by chemically oxidizing the SiGe to form a SiGe oxide in one region but not in another and then removing the oxidized SiGe. See page 202, columns 1 and 2 and page 203, Fig 4.

It would be obvious for one of ordinary skill in the art, at the time of the invention, to use the oxidation and etch method of Chang et al, to form the SiGe/Si structures of Ismail, for their known benefit in the art of selectively removing the SiGe layer as disclosed by the Chang et al reference.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander G. Ghyka whose telephone number is (571) 272-1669. The examiner can normally be reached on Monday through Friday during general business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

November 11, 2006
AGG

ALEXANDER GHYKA
PRIMARY EXAMINER

Av 2812
